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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/940,791	08/29/2001	Larry D. Kinsman	M4065.0014/P014-B	5281

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EXAMINER

ROSE, KIESHA L

ART UNIT PAPER NUMBER

2822

DATE MAILED: 09/11/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

09/940,791

Applicant(s)

KINSMAN, LARRY D.

Examiner

Kiesha L. Rose

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 39-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 39-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to the amendment filed 3 July 2002.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 39-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakashima et al. (U.S. Patent 5,717,252) in view of Maruyama et al. (U.S. Patent 6,266,242) and Ishikawa et al. (U.S. Patent 6,158,116).

Nakashima discloses a semiconductor device (Figs. 2a-c, 16 and 22) that contains a memory device that comprises a plurality of ball grid array semiconductor packages, which comprise an insulating substrate (2) having a top and bottom surface, where the insulating substrate (2) has an aperture (0) therein extending from the top surface to the bottom surface, a series of conductive traces (1) located on bottom surface of base substrate, a plurality of conductive balls (5) connected to series of conductive traces, a thin sheet material (4) made of metal (Fig. 2b) or polyimide (Fig. 16) secured to the bottom surface (Fig. 2b) and the top surface (Fig. 22) of the substrate to form a cavity where a semiconductor die (3) is mounted in cavity. Nakashima discloses all of the limitations except for the memory device connected to a central

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processing unit. Whereas Maruyama discloses a circuit module (Fig. 6) that contains a ball grid array package (30) connected to a central processing unit (2). The memory device is connected to a central processing unit to form an information processing apparatus. (Column 1, lines 8-12) Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the semiconductor device of Nakashima by incorporating a central processing unit connected to the memory device to form an information processing apparatus as taught by Maruyama. Nakashima and Maruyama disclose all of the limitations except for the thin sheet material to be approximately 0.025 to 0.1mm. Whereas Ishikawa discloses an electronic module (Fig. 1b) that contains a metal film (20) having a thickness of 0.1mm with a semiconductor die (40) formed thereon. The metal film has a thickness of 0.1mm to attain sufficient radiation effects. (Column 7, lines 42-46) Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the devices of Nakashima and Maruyama by incorporating the thin sheet material to have a thickness of 0.1mm to attain sufficient radiation effects as taught by Ishikawa.

Response to Arguments

Applicant's arguments with respect to claims 39-44 have been considered but are moot in view of the new ground(s) of rejection. In regards to the combination of the references, the Nakashima reference discloses a ball grid array with a memory device and the Maruyama reference was used to show that a memory device can be

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connected to a central processing unit and therefore my combination shows that limitation. In regards to the thickness of the thin sheet material to be between 0.025 to 0.1 mm, the Ishikawa reference discloses the thickness in the range of 0.1 to 1.0mm, where the 0.1mm limitation is still in the range of the claimed invention.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kiesha L. Rose whose telephone number is 703-605-4212. The examiner can normally be reached on M-F 8:30-6:00 off 1st Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr. can be reached on 703-308-4940. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

KR
KLR

September 4, 2002


CARL WHITEHEAD, JR.
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800